J. W. Truax,

Water Wheel.

No. 111,019. Patented Jan. 17, 1871.

Fig. 1.

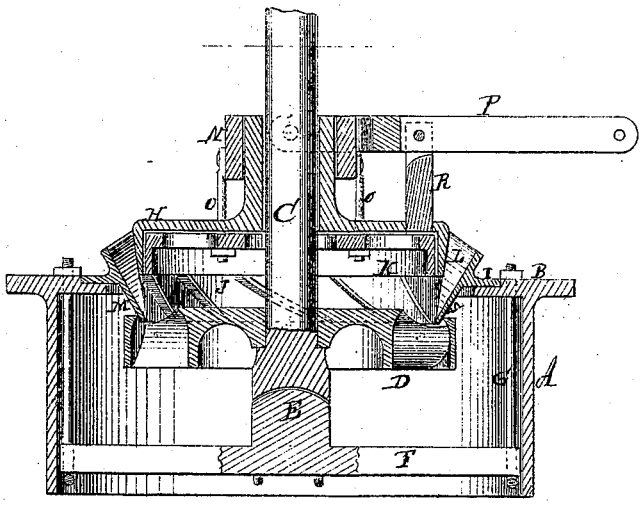
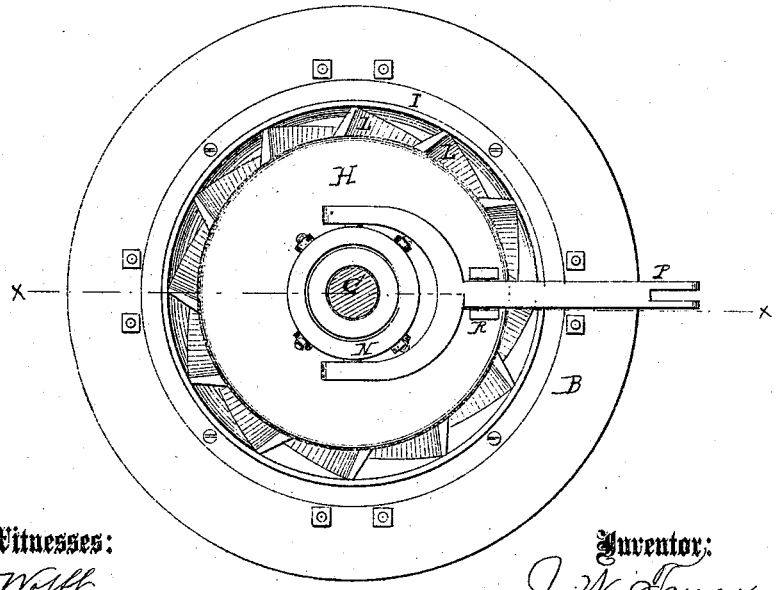


Fig. 2.



Witnesses:

E. Wolff

E. S. Mabee

Inventor:

J. W. Truax

Per Munn & Co

Attorneys.

United States Patent Office.

JACOB W. TRUAX, OF ESSEX JUNCTION, VERMONT.

Letters Patent No. 111,019, dated January 17, 1871.

IMPROVEMENT IN WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JACOB W. TRUAX, of Essex Junction, in the county of Chittenden and State of Vermont, have invented a new and useful Improvement in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification.

This invention relates to new and useful improvements in water-wheels constructed upon the turbine principle, whereby they are rendered more efficient, durable, and simple, and less expensive than such wheels have hitherto been; and

It consists in the construction, arrangement, and combination of parts hereinafter more fully described.

In the accompanying drawing—

Figure 1 represents a vertical section of a water-wheel constructed according to my invention, the section being on the line *x x* of fig. 2.

Figure 2 is a top or plan view.

Similar letters of reference indicate corresponding parts.

A is a fixed cylinder, in which the wheel works.

B is the flange on the upper rim of the cylinder.

C is the shaft to which the water-wheel is firmly fastened by keys or otherwise.

D is the water-wheel.

E is the step of the shaft, which is suspended on the timbers F, by means of the rods G, from the flange B, as seen in fig. 1.

H is the cap or cover of the wheel, which is attached to the flange B by means of a flange, I, as seen.

Beneath the top-plate of the cap is a recess or chamber, J, in which is placed the annular gate K.

The water is discharged onto the wheel through orifices in the cap, being governed in its descent by a series of chutes L.

These chutes terminate at the lower edge of the conical flange M or wall of the chamber J, and the gate K is so fitted and arranged that it is made to close the water-orifices as it descends, and thereby govern the flow of water.

The gate is suspended from the sliding collar N on the shaft by the rods O, and is raised and lowered by means of the forked-lever P attached to the sides of the collar, the fulcrum of which lever is on the stand R.

The water-wheel D is constructed by fixing curved buckets in a space between a central core and a vertical ring or band, and does not differ materially in its construction from turbine wheels now in use.

The timbers F, upon which the step E is supported, are a simple cross, so that the water, as it leaves the wheel, has a free escape.

By the arrangement herein shown the gate K is balanced by the pressure upon its surface, so that it is raised and lowered with perfect ease, and the quantity of water from the pent-stock above is regulated with the greatest nicety.

The water is delivered to the wheel in a continuous annular sheet, the direction of which is governed by the position of the chutes.

The advantages of this mode of construction are many, and must be obvious to all who are acquainted with water-wheels.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The relative construction and arrangement, with respect to each other, of the flanged stationary cylinder A B and the flanged cap H I, as shown and described.

2. The arrangement of orificed, chuted, flanged, and chambered cap H L J and annular gate K with respect to wheel D, as and for the purpose specified.

JACOB W. TRUAX.

Witnesses:

D. J. HUNTER,

JOHN MCGREGOR.